

Attachment C. State Water Resources Control Board's Evaluation of Multimedia Impacts Resulting From The Use Of PuriNOx Fuel In California: Impacts To Water (Public Version)



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FROM: Stan Martinson, Chief
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DATE: FEB - 4 2004

SUBJECT: EVALUATION OF MULTIMEDIA IMPACTS RESULTING FROM THE USE
OF PuriNOx FUEL IN CALIFORNIA: IMPACTS TO WATER

The staff of the State Water Resources Control Board (SWRCB) has completed an assessment of the impacts on surface water and groundwater of the proposed diesel fuel additive PuriNOx. This assessment is provided to the California Environmental Policy Council (Council) for its review in assessing the overall impact on the environment of this particular fuel additive.

Background

California Senate Bill 989 (Shen, 2000) prohibits the California Air Resources Board (CARB) from adopting new fuel specifications until a "multimedia" evaluation has been performed and submitted to the Council for final review and approval. The evaluation that the Council is required to prepare must, at a minimum, address impacts associated with all of the following:

- Emissions of air pollutants, including ozone-forming compounds, particulate matter, toxic-air contaminants, and greenhouse gases;
- Contamination of surface water, groundwater, and soil; and
- Disposal of waste materials, including agricultural residue, forest biomass, and municipal solid waste.

If the Council determines that the overall impact on the environment is adverse, or that alternatives exist that would be less adverse, the Council shall recommend alternative specifications or other measures that the SWRCB or other state agencies may take to reduce the adverse environmental impacts.

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Dear Simeroth

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On July 16, 2003, Lubrizol Corporation (Lubrizol) submitted to CARB a multimedia evaluation report for the use of the PuriNOx diesel fuel technology in California. Lubrizol contracted with the Lawrence Livermore National Laboratory (LLNL) to conduct an independent scientific review of the data and data analysis included in Lubrizol's report to assess how the report addressed the potential impacts to surface water and groundwater that may result from the proposed use of PuriNOx in California. The purpose of this independent review was to assist the SWRCB in completing our evaluation of the multimedia assessment of the proposed use of PuriNOx.

LLNL Report

On September 24, 2003, LLNL submitted its report, "Review of the Data Supporting the Lubrizol Evaluation of Multimedia Impacts Resulting from the Use of PuriNOx Fuel in California," to Lubrizol, SWRCB, CARB, the Office of Environmental Health Hazard Assessment (OEHHA), and to the Office of the Secretary for Environmental Protection (Cal/EPA).

The LLNL report (copy enclosed) concludes that while Lubrizol has made a significant and good faith effort to provide data that address potential water quality concerns, important knowledge gaps still exist. The LLNL report further identifies recommendations to address key uncertainties that would fill the knowledge gaps. These recommendations include:

- Development of Analytical Methods for PuriNOx Components of Greatest Concern;
- Biodegradation Studies to Fill Important Data Gaps;
- Aquatic Toxicity Testing;
- Soil Column Studies; and
- Assessment of Actual Environmental Distributions After a Known Release of PuriNOx Additive or PuriNOx Fuel.

SWRCB Staff Recommendations

SWRCB staff carefully reviewed the LLNL report and discussed the report with staff of CARB, OEHHA and Cal/EPA. SWRCB staff have also discussed the air quality benefits associated with the proposed use of PuriNOx fuel.

SWRCB staff agree with the LLNL report findings, conclusions and recommendations for further studies. The SWRCB staff believe that given the proposed, limited and controlled use of PuriNOx in California, studies related to development of analytic methods, biodegradation, and soil column testing can and should proceed concurrently with the proposed limited use. These recommended studies, as described in the LLNL report, should be completed in a reasonable period of time, but not to exceed two years from the date of regulatory use approval. Additionally, aquatic toxicity testing should be initiated within the two-year timeframe and completed as soon as practicable. These studies must be peer reviewed and then submitted to the SWRCB. Failure to complete these studies in a timely manner should result in discontinuance of

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use of PuriNOx until the studies are completed and reviewed. In the event that these studies identify unacceptable risks to the environment (e.g., high aquatic toxicity), CARB should take immediate action to discontinue PuriNOx use in California until such risks can be minimized.

Regarding the LLNL recommendation for an assessment after a known release, SWRCB staff recommends CARB require that prior to any significant expansion of the proposed distribution and use of PuriNOx (e.g., to the retail market), an environmental fate and transport study be conducted. Such a study should use either a controlled release to land/groundwater or a known release if one has occurred and is acceptable for analysis.

In summary, SWRCB staff believes that the risks to the water environment are minimal and acceptable given the limited and controlled use of PuriNOx. However, studies to fill knowledge gaps should proceed expeditiously.

Finally, SWRCB staff would like to express our appreciation to Lubrizol both for its efforts and cooperation to provide appropriate data for multimedia assessment and for its contract with LLNL for an independent review and analysis of the data.

Questions concerning this assessment should be directed to James Giannopoulos at (916) 341-5680 or giannopi@swrcb.ca.gov.

Attachment

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